

ABSTRACT OF THE DISCLOSURE

An apparatus and method are disclosed which provide a substantially linear relationship between an input signal, such as an input voltage or current, and a predetermined parameter, such as a frequency response or capacitance of a parallel plate capacitor or varactor. The apparatus comprises a square root converter and a logarithmic generator. The square root converter is adapted to provide a square root signal which is substantially proportional to a square root of the input signal. In the various embodiments, the logarithmic generator is adapted to provide an applied signal which is substantially proportional to a sum of a logarithm of the input signal plus the square root of the input signal. The applied signal is a pre-distorted signal which generally has a non-linear relation to the predetermined parameter and which, when applied, allows the predetermined parameter to vary substantially linearly with the input signal.